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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,856	10/29/2003	Peter Mignano	3409-157	9773

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EXAMINER	
MAI, ANH T	

ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,856	MIGNANO ET AL.	
	Examiner	Art Unit	
	Anh T. Mai	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/3/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse in the reply filed on July 27, 2005 is acknowledged. The traversal is on the ground(s) that the example provided by the examiner fails to show distinction between the two groups, specifically independent claims 1 and 18. This is found persuasive; therefore the election/restriction is hereby withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5-11-19, 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al. [US 5425166] in view of Shelly [US 4536733].

Hastings discloses a plurality of conductive traces 16 on a surface of pcb 12; a ferrite toroidal core 22 positioned on the substrate over the conductive traces; and a plurality of conductors 26 fastened in offset fashion to corresponding pair of conductive traces to surround the core as to create a coil, each conductor forms half turn of a full turn of winding loop [figures 4-5; column 4, lines 36-39 and lines 50-54]; the conductive traces converge at center portion and each of said trace has an offset near center portion to enable conductor to be fastened in offset fashion [figure 5] and additional plurality of additional on pcb surface for connection to

components mounted thereon, and plurality of terminals formed for connection of first and second ends of the coil to the components [figure 6].

Hastings discloses the invention as claimed as cited above except for conductors being in pie-shaped. Shelly discloses conductor clips in pie shaped to surround the core 12 as interconnected by printed circuit paths on a pbc [column 2, lines 36-39; figures 1-4]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have conductor in pie-shape as taught by Shelly to Hastings. The motivation would have been to make connection to printed circuit wiring on a pcb [abstract]. Therefore, it would have been obvious to combine Shelly with Hastings.

> Basically, the current transformer device 10 of the present invention includes a ceramic substrate 12, a common example being ceramic alumina, carrying a plurality of conductive tracks 16. The conductive tracks 16 are formed through the utilization of conventional metallization techniques commonly used in hybrid circuit manufacturing processes

With respect to claim 5, Shelly discloses six pie-shaped conductors in figure 1.

With respect to claim 6, Shelly discloses the pie-shape conductor having fingers 20, 22, 24 downwardly from the conductor for connecting to the conductive traces [figure 3].

With respect to claim 7, Shelly discloses the claimed invention except for the number of fingers is five. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have 5 fingers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. MPEP 2144.04

With respect to claims 8-9, see figure 3 of Shelly.

With respect to claims 14-15, it would have been obvious to one of ordinary skill in the art would recognize that a tapped inductor may be formed using the present invention by

simply making another electrical connection on one of the other turns, thereby forming three-terminal device, and by having one or more additional breaks in the windings and appropriate electrical connections on the turns [page 7, line 14-20 of the disclosure].

With respect to claims 16-17, the claims are product-by-process claims are limited by and defined by the process; determination of patentability is based on the product itself. The patentability of the product does not depend on its method of production. *In re Thorpe, 227 USPQ 964 (Fed cir. 1985)* MPEP 2113.

With respect to claims 18-19, 24, the claims are method counterpart of structure claims 1, 5-7.

With respect to claim 23, the claim is method counterpart of structure claim 10.

With respect to claims 25-26, the claims are method counterpart of structure claims 1 and 11-13.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings in view of Shelly as applied to claim 1 above, and further in view of Finnemore et al. [US 6246311].

Hastings in view of Shelly discloses the invention as claimed except for the core material being non-ferrite and dielectric coating to the core. Finnemore discloses a core made of pressed iron powder and having electrical insulation layer 13 of para-xylylene polymer [figure 3, column 4, lines 5-9]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the insulation coating over the core as taught by Finnemore to Hastings in view of Shelly. The motivation would have been provide insulation between the core and the winding. Therefore, it would have been obvious to combine Shelly with Hastings.

> The conductive element may include layers of a silver-filled epoxy, copper and tin. The magnetic core may have polygonic outside and/or inside perimeters and flat top and bottom surfaces. The

> dimensions may be chosen to maintain a generally constant cross-sectional area of the core. The core may be a ferrite or iron
> powder, and may include an electrical insulation layer. The electrical insulation layer may be a para-xylylene polymer
>
> The core could be made of pressed iron powder and may have a different geometry, including toroidal and bar type. Paraxylylene could be replaced by other insulating materials.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al. in view of Shelly as applied in claim 18 and further in view of Anthony et al. [6589389 B2].

Hastings and Shelly disclose the claimed invention except clearly state the use of non-conductive potting compound for preassembling step. Anthony discloses the non-conductive potting material 205 as of standard industry material to couple the elements of the circuit assembly [figure 2, col 9, lines 44-51]. It would have been obvious to a person of ordinary skill in the art to have the potting material as taught by Anthony to Hastings in view of Shelly for preassembly step for the reason above. Therefore, it would have been obvious to combine Anthony with Hastings in view of Shelly.

> It is also noted that insulating, non-conductive material potting or encapsulation or non-conductive coupling material 205 is of the standard industry material and can be applied by standard industry methods to be coupled around the invention elements of a typical energy conditioning electrode arrangement like embodiment 1-1, 1-2, etc. to complete this portion of a circuit assembly before the invention assembly is placed into and becomes part of an actual circuit energization. It is preferable to apply the coating 205 over a portion of the larger portion of whole element 1-1 shown in FIG. 2 to maintain the element 1-1's element integrity in a mounted position.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al. in view of Shelly and further in view of Anthony et al. as applied in claim 20 above and further in view of Chen et al. [6224428 B1].

Hastings, Shelly and Anthony disclose the claimed invention except clearly state the step of providing potting assembly, pre-assembling conductors in a single unit. Chen discloses first step of process assembly and connection the wires to the circuit device and potting treating are

performed then the crimping work could be done by means of automated machinery [figure 2, column 5, lines 53-64]. It would have been obvious to a person of ordinary skill in the art to have the step of potting as taught by Chen to Hastings in view of Shelly and further in view of Anthony in the assembly step to assemble the electrical components together. Therefore, it would have been obvious to combine Chen with Hastings in view of Shelly and further in view of Anthony.

> The construction shown in FIG. 2 may be described as follows in the order of assembly and connection. First, in a first step of a process of assembly and connection, crimping of the first terminals 30a-30d to the wires 80a-80d of the shielded cable is performed. Next, in a second step of the assembly process, connection of the wires 80a-80d to the circuit device, and a potting treatment which covers the lead-out portions of the wires, are performed. Since the crimping work is performed prior to the second step in which the wires 80a-80d are connected to the circuit device, the crimping work can be efficiently performed by means of automated machinery.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al. in view of Shelly as and further in view of Anthony et al. as applied in claim 20 above and further in view of McWilliams et al. [6642827 B1].

Hastings, Shelly and Anthony disclose the claimed invention except using solder to connect the conductors to the Pcboard. McWilliams discloses the method wherein reflow soldering is used to solder the terminals 344 to the pads 704 [figure 2; col 10, lines 51-56]. At the time of the invention made, it would have been obvious to one of ordinary skill in the art to use reflow soldering method to connect the conductor to the terminal as taught by McWilliams to Hastings in view of Shelly and further in view of Anthony.

> Referring now to FIG. 7, the device 300 of FIGS. 4a-4b is shown after encapsulation using an epoxy encapsulant of the type well known in the art, and mounting on a printed circuit board (PCB) 702 having a plurality of conductive pads 704 and traces 706. As shown in FIG. 7, a plurality of devices may be disposed on the PCB if desired. The device 300 is mounted to the conductive pads 704 of the PCB using a surface mount technique involving reflow soldering of the terminals 344 of the device to the pads 704, although other techniques may be used.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Altman et al. [5055816]; Olschewski [4103267].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER